

Appl. No. 09/674,052
Atty. Docket No. CM1778Q
Amdt. dated June 26, 2003
Reply to Office Action of March 28, 2003
Customer No. 27752

REMARKS

Claims 1-12 are pending in the present application. No additional claims are believed to be due. Claim 2 has been canceled without prejudice. Claim 1 has been amended to further characterize and claim the present invention. More specifically, claim 1 has been amended to include: "wherein said second material has a hydrophilicity which is greater than the hydrophilicity of said first material, wherein a plurality of fibers of said first material and a plurality of said second material are substantially unbroken, wherein said first material and said second material are simultaneously bonded together and apertured bonded together." Support for each clause is supported in the subject application (page 13, lines 17-18; figures 2-3; and page 15, lines 6-15, respectively). It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested. Claims 1 and 3-12 remain in the present application.

Rejection Under 35 USC §112, Second Paragraph

Claim 5 has been objected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Office Action states:

With respect to claim 5, the examiner is not clear as to what the term "bonded area" means. It has not been recited that the 1st/2nd materials are even bonded to anything at all, so what is meant by reciting that the bonded area of one is greater than the bonded area of the other? Bonded to what? Even after a review of the specification on page 14 it is not clear what the bonded area actually is.

Applicants respectfully assert that one skilled in the art of laminate web would understand the term "bonded area". However, Applicants gladly provide the following non-limiting explanation of "bonded area" for the Examiner's benefit:

Referring to Figures 1 and 2, the laminate consists of a first material 42 and a second material 44, wherein the second material 44 has a greater width than first material 42, wherein it may be desirable for said second material 44 to be softer than said first material 42 since it is in direct contact with the wearer's skin. Both materials may be constructed of ready-made, pre-formed nonwovens which can be characterized, for example, by their respective softness. Their respective softness is proportional to their respective "bonded area".

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Nonwovens (individually) may be constructed of, for example, (a) staple fibers (such as those used in making carded nonwovens) or (b) endless fibers (such as extruded fibers). Endless fibers are called filaments. During the nonwoven making process, these fibers/filaments are passed through heated calander rolls. Because the fibers/filament are made of thermoplastic polymers (such as PP or PP/PE), bonding of the fibers/filament occurs at the cross-over points of the fibers/filament. In one example, the heated calander rolls consist of two steel rollers with smooth surfaces, then 100% "bonding" may be expected and the resulting product would be a film, rather than a nonwoven. In yet another example, at least one of the heated calendar rolls has 'figures' extending outside the surface of the roll, called 'Print', which may, for example, occupy 10% - 20% of the surface area of said roll, then 10% - 20% "bonding" may be expected and the resulting product would be a nonwoven. The resulting tensile strength of said nonwoven is proportional to the bonded area (e.g., 20% bonded material has more strength than a 10% bonded material) and the resulting softness of said nonwoven is inversely proportional to the bonded area (e.g., 10% bonded material will be softer than a 20% bonded material).

Applicants respectfully assert that claim 5 is definite and sufficiently supported by the subject application, as exemplified on page 14, lines 14-25.

Rejection Under 35 USC §102 Over Gilman

Claims 1,3,4 and 6-12 have been rejected under 35 USC §102(b) as being anticipated by Gilman et al. (5,437,653). The Office Actions states:

With respect to claims 1,6-9,11, Gilman discloses a laminated web that has a 1st material 12 and a 2nd material 20. The claimed open area is disclosed in column 3, lines 31-34, and the recited aperture sizes are disclosed in column 3, lines 58-63. The apertures of the 1st and 2nd materials are aligned as claimed.

With respect to claims 3,4, the 1st/2nd materials are nonwoven. They have no weave. With respect to claim 12, the backsheet is 16 and the absorbent is 22. With respect to claims 1,10, (a slightly different interpretation from that set forth above for claims 1,6-9,11), Gilman discloses a laminated web that has a 1st material 20 and a 2nd material 12. The claimed open area is disclosed in column 3, lines 31-34, and the recited aperture sizes are disclosed in column 3, lines 58-63. The apertures of the 1st and 2nd materials are aligned as claimed. The 2nd material has a greater width than the 1st material as claimed.

Applicants respectfully assert that Gilman is directed to an absorbent article having two coapertured layers 12, 20 (see Figs. 1 and 2) and a method for making the same. More specifically, Gilman describes "[t]he absorbent layer 20 also contains a plurality of apertures 26 coaxially aligned with at least some of the apertures 18 formed in the cover 12" (col 5, ll. 9-11). Further, Gilman states that "the method provides an economical way of forming the absorbent

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article by aperturing both-layers in a single operation using mating male and female dies' (col. 2, ll. 28-30). More specifically, Gilman describes that "[b]oth dies can be formed as rollers or drums with the male die consisting of a plurality of pins and the female die consisting of a plurality of aligned openings. One or both dies may be heated if desired." (col. 5, ll. 22-28). Further, in referring to Fig. 2, Gilman "theorize[s] that in the aperturing process, some of the fibers 28 are broken and pushed down into the absorbent layer 20 by the penetration of the aperturing pins. As these broken fibers are pushed down into the absorbent layer 20, they tend to embed themselves in the fibers of the absorbent 20. This feature is important because it prevents the fibers 28, which can be relatively stiff fibers, from moving upward as the aperture pins are withdrawn." (col. 5, ll. 44-51).

Gilman further characterizes his two coapertured layers in that "[t]he cover 12 is designed to contact the body of the wearer and should be constructed of a nonwoven material made from natural or synthetic fibers. The cover 12 can be a web formed from large denier fibers having an open pore structure to allow body fluid to quickly pass down through it. Suitable materials include bonded carded webs made from polyester, polypropylene, polyethylene, nylon, or other heat-bondable fibers." (col. 2, ll. 67 - col. 3, ll. 8). Further, Gilman characterizes that "[t]he absorbent layer 20 could be constructed of the same material as the cover 12, for example, both layers could be spunbond, it is desirable to form it from a different material or from the same material having different properties, i.e. basis weight, pore size, etc." (col. 4, ll. 49-54).

The present invention describes a 3-step process. In step one, a set of heated rollers are used, a first roller with a smooth surface and a second roller having a plurality of projections extending about its entire outer surface, wherein a first and a second material are simultaneously bonded together and apertured (p. 15, ll. 6-15). In step two, the apertured laminate is cooled. In step three, rollers "break the solid fused material which extends around the perimeter of the apertures. Breaking the solid fused material increases the softness of the laminate web". (p. 15, ll. 28-30). Additionally, no fibers are broken and extend outside either one of the two upper or lower surface areas, thus, not experiencing the softness issue created in Gilman and also not entangling with the next layer when being wound (as expected in Gilman). Additionally, the two layers are bonded to form a laminate. Last, a hydrophilicity gradient can be introduced by using higher temperature settings in the top roller (in contact with the subsequent skin-facing side of the laminate); therefore, resulting in an increased evaporation of the surface-active chemicals in the top layer and resulting in the lower layer being more hydrophilic.

These differences which make the present invention distinguishable over Gilman: (1) fibers of the first and second material are substantially unbroken and non-entangled, (2) the first

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and second material are simultaneously bonded together and apertured bonded together, and (3) the second material has a hydrophilicity greater than the first material, have been added as claim limitations within independent claim 1 herein. Consequently, Applicants respectfully assert that Gilman does not teach or suggest all of Applicants' claim limitations and therefore, does not establish a prima facie case of obviousness (see MPEP 2143.03).

Rejection Under 35 USC §103(a) Over Gilman

Claim 2 has been rejected under 35 USC §103(a) as being unpatentable over Gilman.

The Office Action states:

Gilman discloses the invention substantially as claimed. Gilman does not disclose that the 2nd material has more hydrophilicity than the 1st material. Gilman discloses that the 1st material provides a dry surface against the skin of the wearer and in column 3, lines 3-14 Gilman discloses suitable materials for the 1st material. The disclosed materials (polymers) are hydrophobic. Gilman calls the 2nd material an absorbent layer. Gilman does not disclose this layer to be hydrophilic. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the 2nd material hydrophilic to enhance the absorbency of that layer because after all it is an absorbent layer. An absorbent layer is intended to absorb fluids. If the 2nd material is hydrophilic, it will have more hydrophilicity than the 1st material, because the 1st material is hydrophobic.

As discussed above, Claim 1 has been amended herein. Claim 2 depends from amended claim 1; as such, this rejection has already been addressed and overcome.

Rejection Under 35 USC §103(a) Over Langdon

Claim 1-4, 6-9, 11 and 12 have been rejected under 35 USC §103(a) as being unpatentable over Langdon (5,500,270). The Office Action states:

With respect to claims 1,6-9,11, Langdon discloses a laminated web that has a 1st material 242 and a 2nd material 246. The laminated web has apertures that are aligned as claimed (see fig 7). The aperture size is disclosed in Langdon, because of the incorporation by reference of Radcl et al. (4342314) in column 9. Radcl discloses sizes of apertures that satisfy what has been claimed. Not disclosed is what the percent open area of the laminated web is. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the claimed percent open area because the open area determines how well fluid can pass through the laminated web. The more apertures or larger sized apertures there are, the more fluid can pass through the web. The less apertures or smaller sized apertures there are, the less fluid passes. To provide the laminated web with a 20% open area is considered obvious to one of ordinary skill in the art to allow for desirable fluid flow through the laminated web.

With respect to claim 2, see column 6, lines 41-44.

With respect to claims 3,4, the 1st/2nd materials are nonwoven. They have no weave.

With respect to claim 12, the backsheet is 23 and the absorbent is 24.

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Applicants respectfully assert that Langdon does not teach or suggest all of Applicants' claim limitations of currently-amended claim 1; and therefore, does not establish a prima facie case of obviousness (see MPEP 2143.03). Specifically, Langdon does not disclose the 3-step process, nor any other suitable process, that is capable of achieving the product characteristics discussed above and herein incorporated by amendment.

CONCLUSION

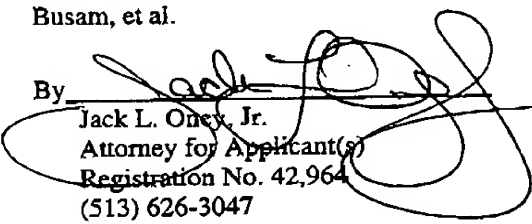
In light of the above remarks, it is requested that the Examiner reconsider and withdraw the rejections under §102, §103 and §112. Early and favorable action in the case is respectfully requested.

Applicants have made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicants respectfully request reconsideration of this application, entry of the amendments presented herein, and allowance of Claims 1 and 3-12.

Respectfully submitted,

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